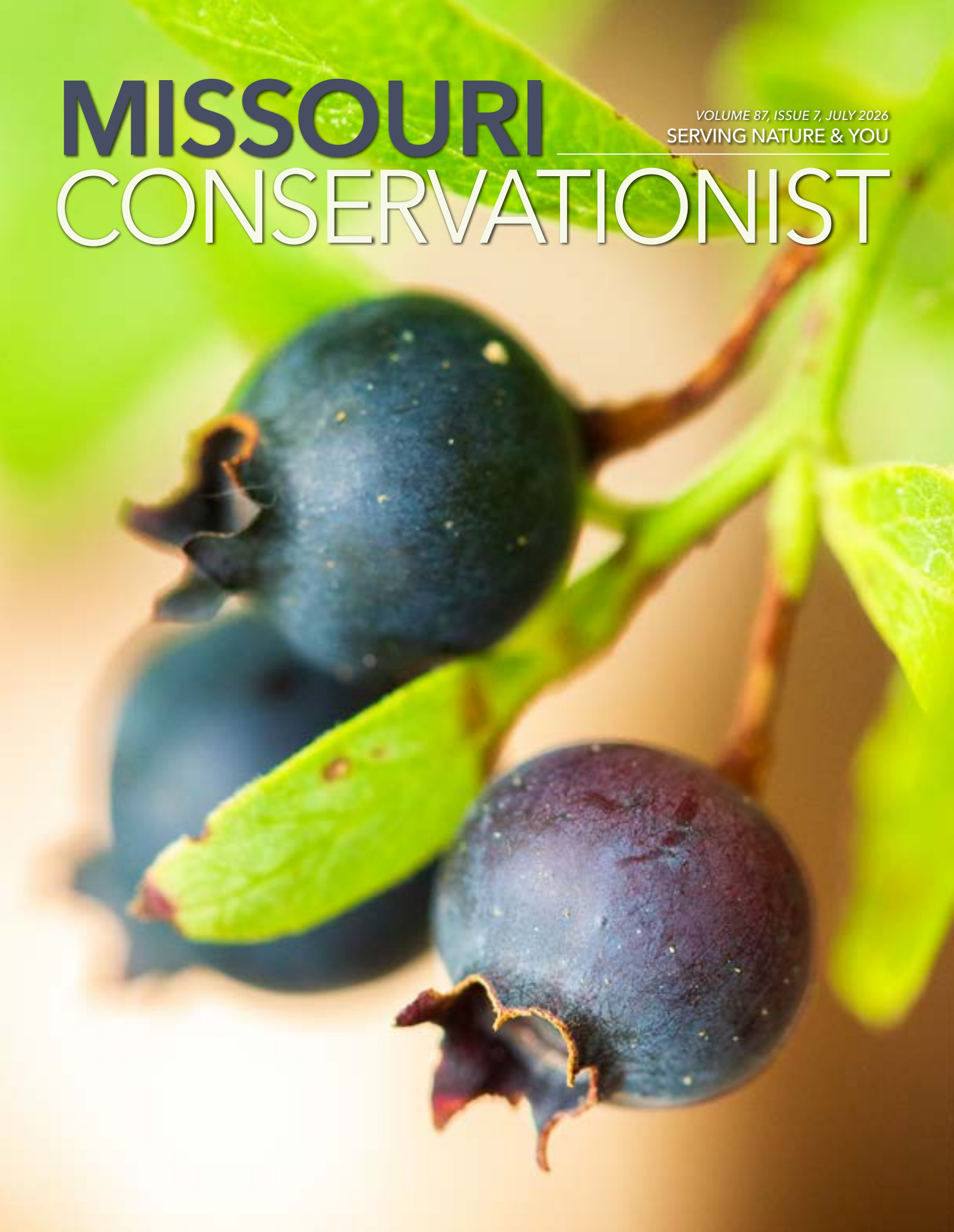


MISSOURI CONSERVATIONIST

VOLUME 87, ISSUE 7, JULY 2026
SERVING NATURE & YOU





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NATURE BOOST



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ON THE COVER

Wild lowbush blueberries ripen in July.

NOPPADOL PAOTHONG

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1/125 sec, ISO 800

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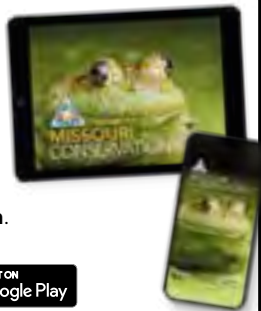
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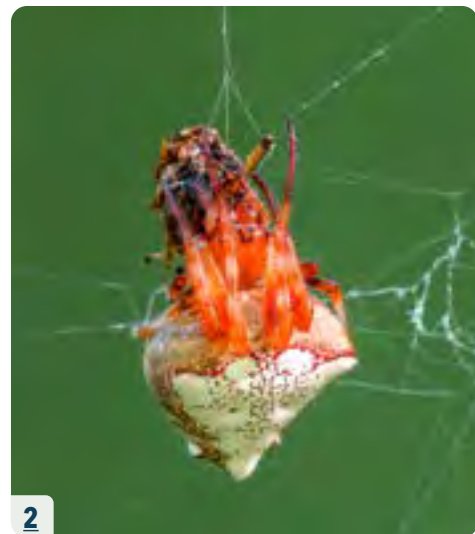
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Inbox



Want to see your photos in the *Missouri Conservationist*?

Submit your photos online via [flickr.com/groups/mdcreaderphotos-2026](https://www.flickr.com/groups/mdcreaderphotos-2026/), mdc.mo.gov/magazine-reader-photos or by emailing readerphoto@mdc.mo.gov

1 | American toad by **Janie Wellesley**, via website submission

2 | Arrowhead spider by **Steven Haddix**, via Flickr

3 | Least tern by **Joseph Burkes**, via Flickr

4 | Indigo bunting by **Tammy Harmon**, via email submission

➔ In the December issue, we plan to feature even more great reader photos. Send in your best year-round pictures of native Missouri wildlife, flora, natural scenery, and friends and family engaged in outdoor activities. Please include where the photo was taken and what it depicts.



Letters to the Editor

Submissions reflect readers' opinions and may be edited for length and clarity. Email Magazine@mdc.mo.gov or write to: MISSOURI CONSERVATIONIST PO BOX 180 JEFFERSON CITY, MO 65102

EYE-OPENING MAGAZINE

The *Missouri Conservationist* opens my eyes to wildlife I otherwise wouldn't think about. I'm planting milkweed and dill plants in my yard to help butterflies and other pollinators. Every issue is very informative and the photography is spectacular.

James Guempel St. Louis

JOY OF THE OUTDOORS

The *Missouri Conservationist* is always a welcome joy. I miss living in the woods with all the trees and wildlife, our log home, dogwood trees in bloom, and deer at the door. Thank you for all you do to keep these things in our lives. My children, grandchildren, and great-grandchildren love life outdoors.

Ladonna Baker Troy

PASS IT ON

I absolutely love the *Missouri Conservationist*. I find myself rushing to the mailbox, hoping the magazine has arrived. The articles and pictures are always amazing and very informative. And, when I've finished with them, I share them with my grandchildren. Keep up the good work, y'all.

Terry D. Carter Springfield

AWAKE WITH THE WARBLERS

At my age, in the evening after farm work and/or play when I sit to read a moment, I generally soon fall asleep. But not so when reading Matt Seek's *Warblers-From A to Y* [April, Page 10]. To the team who work on the *Missouri Conservationist*, I say: Way to warble.

Patty Gillespie Newton, Ill.

Up Front



✧ Two hundred fifty years ago this month, the founding fathers had a vision — that people had the right to govern themselves. They wanted a different future for themselves and for their families, one grounded in the belief of life, liberty, and the pursuit of happiness.

In 1776, Missouri was a place of rolling prairies, open woodlands, and expansive wetlands. Herds of bison roamed the prairies, elk bugled in the valleys, black bears inhabited the forested edges, and paddlefish, sturgeon, and bass swam our clear streams. At the confluence of the big rivers, the intersection of the prairies and the Ozarks, it was likely one of the richest wildlife places on the continent.

And then in less than a century, those once abundant fish and wildlife were largely gone due to market hunting, overharvesting our forested land, and overfishing our streams. It was at that point that Missourians wanted something different. In 1936, Missourians established the Missouri Conservation Commission and charged it with one primary task, "Bring 'em back."

Many fish and wildlife species have returned, forests have regrown, and streams have recovered, but the work of protecting and managing these wild things and their habitats continues. Today, with ever increasing demands to feed and fuel a growing country with changing expectations and requests for the land, how do we balance sustaining the things that make Missouri a great place to live while meeting the expectations of the public?

The founders were outdoorsmen. They hunted, fished, and understood their lives were inseparable from the natural world. Embedded in their revolutionary view was a radical idea that wildlife belongs to all people, not just to the kings. This idea of wildlife as a public trust makes conservation in America unique to anywhere else in the world. Wildlife belongs to all of us, and we must work together to conserve it.

The radical idea of our time is to once again recognize how important nature is, not just as a commodity to be consumed but as critical infrastructure necessary for our own well-being. Taking care of nature is essential to our ability to obtain that great American dream of life, liberty, and the pursuit of happiness.

JASON SUMNERS, DIRECTOR

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Missouri Conservation Commissioners

Have a Question for a Commissioner?

Send a note using our online contact form at mdc.mo.gov/commissioners.



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Edward C. CLAUSEN

AGENCY PARTNERSHIPS

Wildlife Vehicle Collision Study

MoDOT and MDC are working together to make roads safer for people and wildlife

by Dianne Van Dien

✳ February 2026 marked the completion of a first-of-its-kind study for the state of Missouri — the Missouri Department of Transportation (MoDOT) Statewide Wildlife Vehicle Collision Study, which was funded through the Federal Highway Administration’s Wildlife Crossings Pilot Program.

“This was a very collaborative study between MoDOT and MDC,” said MoDOT Senior Environmental Specialist Caleb Knerr. “The goal was to have a systematic way of analyzing wildlife-vehicle collision hotspots and then prioritizing those locations.”

MDC’s role, explained Knerr, was providing ecological data to help rank those hotspots. With top sites identified, he said, MoDOT can look at “existing structures that can be retrofitted or have fencing added to facilitate wildlife movement under those roads or bridges.”

Data for the study fell into three main categories: safety (number and severity of crashes involving wildlife), ecological (habitat type and quality,



For many animals, it’s impossible to find food, mates, and other survival needs without crossing a road. Adding structures that help wildlife pass safely between habitat sites can also make roads safer for drivers.

presence/likelihood of priority species), and feasibility (benefits vs. costs, landscape suitability, current structures, and future development).

Of the 33,811 miles of roads that MoDOT maintains, 627 segments were identified as wildlife-vehicle conflict hotspots. The top 10 sites will be prioritized for mitigation work (pending funding). Study data will also be incorporated into MoDOT’s overall work plans so mitigation can be completed at other locations as opportunities arise.

While data for collisions with large animals like deer can be obtained from police reports, information on collisions with small animals is harder to find. To begin filling this gap, in October 2025 MoDOT launched the Roadkill and Observation Data System (ROaDS), an app for the public to report roadkill and live animals spotted along roads.

“We’re hoping the ROaDS app will help with recording amphibians, reptiles, and other species that go unnoticed because they don’t cause enough damage or injuries to have the highway patrol or insurance involved,” said MoDOT Senior Environmental Specialist Tayler MacDonald.

MDC Policy Coordinator Jordan Meyer noted that the study also has value for MDC staff. “These results,” he said, “provide a strong foundation for both MoDOT and MDC to integrate wildlife connectivity and public safety considerations into upcoming projects.”

At a Glance

MoDOT’s Statewide Wildlife Vehicle Collision Study is a grant-funded project completed in collaboration with MDC to pinpoint priority locations for making roads safer by facilitating wildlife crossings. The study shows where future mitigation could have the biggest impact for both wildlife and people.

Examples of mitigation:

- Fencing to keep wildlife off roads or guide them to areas for crossing under the road
- Adding materials under bridges and culverts to create pathways that wildlife can easily walk on
- Removal of vegetation that attracts deer to roadsides or that hides underpasses



MISSOURI CONSERVATION COMMISSION GIVES INITIAL APPROVAL OF REGULATION CHANGES, NEW PERMITS

MDC ASKS FOR PUBLIC COMMENTS BEFORE PROPOSED REGULATION CHANGES AND PERMITS ARE FINALIZED IN SEPTEMBER

FALL NONRESIDENT DEER HUNTING REGULATIONS MODIFIED

The Missouri Conservation Commission approved proposed changes to nonresident deer hunting regulations at its May 29 open meeting in Washington.

The approved regulation change for the upcoming 2026 deer season reduces the nonresident antlered buck bag limit from two to one. Nonresident landowners who qualify for nonresident landowner permits will maintain an antlered buck bag limit of two.

The commission also gave initial approval to a regulation change that would require nonresident deer hunters to purchase a Nonresident Public Land Deer Hunting Permit for \$165 to be able to pursue, take, possess, and transport deer on public land in Missouri, including conservation areas and other state and federal public lands, beginning with the 2027 deer season.

If given final approval, this permit will become effective for the 2027 deer season.

PROPOSED CAMPING PERMIT

For many Missourians, including hunters, anglers, floaters, and other outdoor enthusiasts, camping is a popular activity. MDC manages about 1,000 conservation areas around the state, with more than 320 offering free camping.

Campers and MDC staff have noted an increasing number of problems on conservation areas involving compliance issues, safety concerns, and environmental impacts from vandalism, illegal activities, and illegal stays on camping sites.

Currently, campers on MDC areas do not need a permit, do not pay a fee, and do not register to camp. This lack of information can cause problems for conservation agents and MDC staff when they need to regulate activities on a camping area or identify campers causing problems or engaging in illegal activities.

To help better regulate and monitor activities on our camping areas, MDC is proposing a low-cost, five-day permit for all camping on conservation areas for up to 10 people. The "\$5-for-5-for-10" permit would cost \$5 for up to 5 days (and four nights) of camping for a group of 10 people or fewer, even if fewer days were used and fewer people participated.

If given final approval, the changes will become effective Feb. 28, 2027.

PROPOSED PERMIT FOR UNSTAFFED FIREARMS SHOOTING RANGES

MDC offers free recreational firearms shooting on more than 35 unstaffed shooting ranges around the state. The ranges were designed decades ago primarily for hunters, who traditionally used them during the spring and fall in preparation for various hunting seasons.

Range use has increased significantly in recent years with more home/self-defense firearms practice and increasing use of modern sporting rifles. Increased use has also resulted in more damage to shooting range signs, booths, and other infrastructure from some visitors, along with increasing litter from some shooters, including spent shells, targets, and other items.



To help reduce range damage, litter, and misuse, MDC proposes requiring users of our unstaffed firearms shooting ranges to have a valid small game permit. Existing age and disability exemptions will remain. The proposed regulation changes would apply only to MDC-owned unstaffed firearms shooting ranges, not partner ranges or MDC's five staffed shooting ranges. For residents, the allowable permit options start at \$11.50 for an annual small game permit. For nonresidents, daily small game permits are \$16 and annual small game permits are \$108.50.

If given final approval, the changes will become effective Feb. 28, 2027.

Get more information and comment on the proposed regulation changes from July 16 through Aug. 14 at short.mdc.mo.gov/OTj.

After reviewing the public's comments, the commission will give final consideration to the proposed regulation changes at its open meeting on Sept. 11.

Semiquincentennial What **IS** it?

In honor of our nation's 250th birthday, we offer a spin on this month's What IS it? Can you guess the red, white, and blue natural wonders?

Answers on page 8.

When
I get
cut, I
"bleed"
blue
"milk."

One of
Santa's
reindeer
shares my
name.

I shine blue
in the sun
and turn
black in the
shade.





4

One of Missouri's most successful sports teams is named after me.

5

Look at me! I'm Missouri's official state tree.

6

I grow where it's damp, but I'm as dry as a piece of chalk.

7

My beak's bigger than any other in Missouri.

8

Although I'm one of Missouri's most colorful reptiles, I'm really hard to see.

9

I'm an angel – but not a good kind.

10

I bloom just in time for northbound hummingbirds to arrive.

11

All my cousins stay up late, but I'm an early riser.

12

Nothing brings friends together like a feast with me as the main course.

13

I'm an insect whose name tells you when I might flutter by.

14

I may be a late bloomer, but I'm well worth the wait.

15

Not only do I come in white. I also come in "blue."

16

I'm the only completely red one of my kind in America.

APPLY ONLINE FOR MANAGED DEER HUNTS

Beginning July 1, deer hunters can apply online through the MDC website for a chance at more than 100 managed deer hunts throughout the state this fall and winter. The managed deer hunt application period is July 1–31. Hunters are selected by a weighted random drawing. Draw results will be available Aug. 15 through Jan. 15. Applicants who are drawn will receive area maps and other hunting information by email or mail if an email address is not located on the customer's account.

MDC offers managed deer hunts for archery, muzzleloading, crossbows, and modern firearms from mid-September through mid-January at conservation areas, state and other parks, national wildlife refuges, and other public areas. Some managed deer hunts are held specifically for youth or for people with disabilities.

Get more information on managed deer hunts, preview hunt details, and apply at mdc.mo.gov/managedhunt. Details about managed hunts also can be found in the *2026 Fall Deer & Turkey Hunting Regulations and Information* booklet, available starting in early July at MDC offices and nature centers, permit vendors around the state, and online at mdc.mo.gov/hunting-trapping/regulations.

WHAT IS IT?

REVEALING THE RED, WHITE, AND BLUE

- | | |
|---------------------------|------------------------|
| 1. Indigo milky | 9. Destroying angel |
| 2. Blue dasher | 10. Columbine |
| 3. Indigo bunting | 11. Snowy owl |
| 4. Northern cardinal | 12. Red swamp crayfish |
| 5. Flowering dogwood | 13. Spring azure |
| 6. Emetic russula | 14. Cardinal flower |
| 7. American white pelican | 15. Snow goose |
| 8. Northern scarletsnake | 16. Summer tanager |



Ask MDC

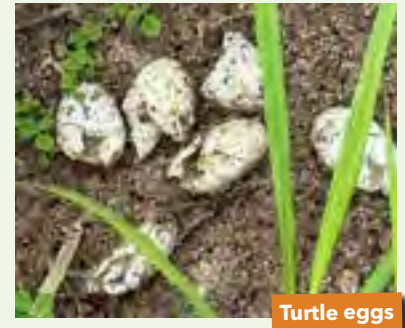
Got a Question for Ask MDC?

Send it to AskMDC@mdc.mo.gov
or call 573-522-4115, ext. 3848.

Q: I came across at least seven nests of turtle eggs last June along a trail near Glencoe. All the eggs in each nest were eaten. Which turtle species laid these eggs? And what ate them?

➔ Unfortunately, most turtle species' eggs are similar in color, shape, shell texture, and size, making them difficult to identify. In most cases, to be accurate you must either see the turtle laying the eggs or witness the young hatching.

However, for this photo, it's possible to rule out snapping turtles and softshell turtles. Those species have eggs that are round, rather than elliptical shaped. And because these eggs are not pale and pinkish white, it's unlikely they were laid by a Mississippi mud turtle or an eastern river cooter. These eggs probably weren't laid by a chicken turtle, Blanding's turtle, or a yellow mud turtle either. Those three species are endangered in Missouri, meaning they're rarely seen. And because the shells don't appear hard and brittle, the eastern musk turtle is a less-likely culprit. They are too large to be box turtle eggs. Finally, the southern painted turtle's Missouri range is the Bootheel, not St. Louis County.

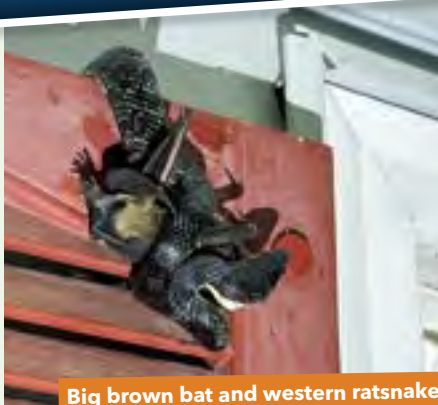


Thus, by a process of elimination, a few of Missouri's 18 turtle species can be discarded. However, that still leaves several possible species, including the western painted turtle, three of the map turtles (*Graptemys*), and Missouri's red-eared slider.

"Based upon what I believe are the length of the elongated eggs, my first guess would be red-eared sliders. But they could be western painted turtles' eggs," said Missouri State Herpetologist Jeff Briggler. "And, if they are very close to a large creek or stream, it is possibly one of the map turtle species."

All turtles lay eggs on land. Most select well-drained, sandy, or loose soil to deposit their eggs. The site usually faces south or southeast.

Many animals eat turtle eggs. "This is definitely a depredated nest, likely from raccoons," Briggler said.



Big brown bat and western ratsnake

Q: Last July, my wife noticed bats were flying near our front door. I went outside and took a closer look at what I thought was a huge bat on a shutter. I believe it to be a western ratsnake, but I am less certain of the bat species. Can you tell me what type it is?

➔ Based on the size, color, and presence of a keeled calcar (or spur that supports the web of skin between the hind leg and tail), this appears to be a big brown bat being eaten by a western ratsnake.

Bats contend with many wild predators, including minks, raccoons, skunks, domestic cats, rats, hawks, owls, and snakes. Western ratsnakes, commonly called black ratsnakes, kill their prey by constriction, but they also can swallow smaller prey. They are excellent climbers and often raid tree cavities and nesting boxes for eggs and young. Ratsnakes have been known to climb cave walls and prey on bats mid-flight as they exit the roost.

Placing a bat house away from trees or hanging branches can prevent predators from reaching bats. Usually, placing a bat house on a tall pole or the side of a building is the best way to ensure this protection. However, predatory snakes can be an exception to the "poles are safe" rule, as snakes have been known to climb them. But installing a predator baffle can reduce the chances of that occurring.

WILDFIRE CLIFF WHITE



CELEBRATE SAFELY

As you celebrate this summer, MDC reminds you to be careful with fireworks, campfires, and other sources of fire that could cause a wildfire.

Fireworks: Don't light fireworks in areas where sparks could ignite dry grass, leaves, or other potential fire fuel. Always have an approved fire extinguisher and an available water supply to douse sparks or flames. Wet the area around where fireworks are being discharged. Check with local ordinances and authorities for bans on fireworks and open burning.

Outdoor Burning: Don't burn during unfavorable conditions. Dry grass, high temperatures, low humidity, and wind make fire nearly impossible to control. Check with local fire departments regarding burn bans that may be in place. A person who starts a fire for any reason is responsible for any damage it may cause.

Driving Off Road: Wildfires can start when dry fuel like grass meets catalytic converters. Think twice before driving into and across a grassy field. Never park over tall, dry grass or piles of leaves that can touch the underside of a vehicle. When driving vehicles off road, regularly inspect the undercarriage to ensure that fuel and brake lines are intact and no oil leaks are apparent. Always carry an approved fire extinguisher on vehicles that are

used off road. Check for the presence of spark arresters on ATV exhausts.

Making a Campfire: Clear a generous zone around fire rings. Store unused firewood a good distance from a campfire. Never use gasoline, kerosene, or other flammable liquids to start a fire. Keep campfires small and controllable. Keep fire-extinguishing materials, such as a rake, shovel, and bucket of water, close. Extinguish campfires each night and before leaving camp, even if it's just for a few moments.

Call for Help: Call 911 at the first sign of a fire getting out of control.

Report Forest Arson: Wildfires are sometimes set by vandals. Help stop arson by calling 800-392-1111 and reporting any potential arson activities. Callers will remain anonymous and rewards are possible.

Prescribed Fire: Fire used in the wrong way can create disasters. Used in the right way, fire can help create habitat for wildlife. For more information on using prescribed fire as a land management tool, visit short.mdc.mo.gov/Zrf.

OUTDOOR SKILLS

THE BASICS OF FROG GIGGING

by Jenna Stiek

Frog gigging is a popular summer activity that begins at sunset on June 30 and runs through Oct. 31. Frog gigging takes place at night, so it requires a combination of stealth, artificial light, and careful listening.

The frog's eyes are illuminated by the light, allowing them to be seen along the bank. The bright beam temporarily dazes the frog, allowing for a close approach and a successful strike. Frogs can also be located by listening for their croak. It is a deep, loud call from males to establish territory and attract females.

A Missouri fishing permit or Small Game Hunting Permit is required for residents aged 16 to 64. The daily limit is eight bullfrogs or green frogs, with a possession limit of 16.



METHODS:

With a fishing permit, frogs can be taken by gig, which is a metal spear with three to four prongs, attached to a 5-8-foot pole. But they can also be taken by trotline, throw line, limblime, bank line, and jug line; snagging; snaring; grabbing; or pole and line.

With a hunting permit, frogs can be taken by crossbow, pellet gun, .22 or smaller caliber rim fire rifle, or pistol.

With either permit frogs may be taken by hand, net, bow, or atlatl.

EQUIPMENT: You will need a frog gig, rubber knee boots or hip waders, bug spray, flashlights, headlights, a net, and a breathable mesh bag to keep the harvested frogs alive while hunting. Wire fishing baskets and a 5-gallon bucket with a lid to prevent escape are recommended. It is important to keep the frogs damp, so the meat stays cool and fresh.

LOCATION: Ponds, lakes, wetlands, riverbanks, and other waterways with vegetation are all great places to find frogs. Water with few to no predators will yield the best frog populations, which is why newer ponds or very old ponds are usually prime locations.



AFTER THE HARVEST: You will need a pair of shears and a filet knife or pliers to process the frog. Lay the frog on its belly and use the shears to cut the body in half just above the hip joints. Insert a finger underneath the skin on the frog's back and push to the base of the legs. Then pull the skin towards the legs and remove the feet at the ankle joints. Rinse the frog legs under cold water. To remove slime and the gamey flavor, soak the legs in salt water for 1-2 hours or overnight. Pat dry before cooking. The most popular way to prepare frog legs is by deep frying them, but they can also be prepared by baking or smoking.

What **outdoor skill** would you like to learn?



THE URBAN RANGERS

EXPLORING THE
OUTDOORS
WHILE BUILDING
CONFIDENCE
AND A LOVE
FOR NATURE

story by Brent Frazee
photos by Pat Whalen

When 14-year-old Titus Woods joined his fellow Urban Rangers on the Current River last summer, it was far more than just another fun outing with friends.

In many ways, it was a landmark moment in his recovery from life-threatening health issues.

A little more than a year previously, Woods underwent liver transplant surgery after being diagnosed with cancer.

The surgery went well, the cancer is gone, and the Lee's Summit teenager is on the road to recovery. His top goal last summer? To follow in his older brothers' footsteps and go on the adventure of a lifetime.

The three-day trip is a collaboration between MDC and the Kansas City-based Urban Rangers Corps, a nonprofit that is dedicated to putting youth, many of them from the inner city, on a path to success.



"You can just see their confidence grow. And that's what it's all about. It's our hope that a trip like this will spark a longtime interest in the outdoors."

— STEVE JACOBSEN

"Some of these kids have never been out of the city before," said Benjamin Suber, the summer program director for the Urban Rangers. "They've never canoed, camped, or fished before. This is a new world to them."

"But it's the highlight of the year. Even if they're a little scared at first, by the time they're done, they can't wait to come back."

Such is the case with Woods. This trip was his chance to feel "normal" again.

"I'm just now starting to get my energy back," he said. "I got tired paddling. I took a lot of breaks. But I had a great time."

THE ROOTS OF A SPECIAL ADVENTURE

The Urban Rangers Corps was founded in 2005 by Father John Wandless, the pastor of an inner-city church.

He believed that many Black youngsters needed a positive influence in their lives, a guiding force to provide hope. He gathered a group of mentors who could help the boys achieve good grades, get jobs and internships, and focus on life goals.

At one session at MDC's Anita B. Gorman Conservation Discovery Center, Wandless talked to Pat Whalen, a naturalist, about a wild idea — taking the boys on an extended adventure to the Ozarks.

"Father John and I had both been Boy Scout leaders and we knew the value of taking kids on camping trips," Whalen said. "I had experience leading overnight float trips to the Buffalo, the Current, the Eleven Point, and even the Green River in Utah, and they were challenging but great fun. So, I was open to the idea."

That started a partnership that is now 15 years old. Under the leadership of Whalen and Steve Jacobsen, assistant manager at the Discovery Center, MDC provides canoes, tents, life jackets, and meals.

Last summer, MDC, Missouri State Parks, and the Missouri River Bird Observatory provided volunteers to ensure that the 28 boys who signed up were safe on the water and to provide leadership.

The tents were set up by the time the young campers arrived at an Ozark National Scenic Riverways campground at Round Spring. At night, they gathered around a campfire and exchanged stories as they poked at the embers.

It was early to rise the next morning as they headed out for their float trip. The group traveled from Round Spring to the Pulltite access to begin their 9-mile float back to their base camp.

They stopped for lunch, swimming and exploring to find the critters living in the popular stream. On their return, they were treated to a cookout prepared by conservation agents, forestry workers, and other representatives of MDC's Twin Pines Conservation Nature Center.

After one more night of camping, they explored, went birdwatching, played yard games, and relaxed.

The adults who led the trip then were able to exhale and reflect on what a few days in nature can do for the soul.

"With a number of kids, we will see a big change from the time they launch their canoes to the time they're finished," Jacobsen said. "Some of them dump their canoe right away, but they're pretty efficient by the end of the trip."



Through the Urban Rangers program in Kansas City, inner-city youth can experience a new world — the outdoors. On a trip MDC coordinated last year, the group canoed the Current River, camped under the stars, investigated aquatic life, and enjoyed cookouts at the water's edge.



"You can just see their confidence grow. And that's what it's all about. It's our hope that a trip like this will spark a longtime interest in the outdoors."

A LEADER WITH A PASSION

Whalen has no trouble practicing what he preaches.

Today, he is an avid canoeist, delighting in getting off the grid and enjoying the beauty of Ozark float streams.

"The Current is a perfect setting for a trip like this," Whalen said. "The scenery is beautiful, the water is clear, and the current keeps you moving along. We'll see people from all over the country here."

"It's just one of those places that is special."

Whalen has been searching for that solitude much of his life. He grew up in the inner city, much like many of the kids involved in the Urban Rangers. But even then, he was drawn to the outdoors.

"Our neighborhood backed up to Forest Hill Cemetery, and at the time, there was a patch of undeveloped land with some woods and a creek running through it," he said. "I was constantly out there, exploring."

Today, he is based at a nature center — the Anita B. Gorman Conservation Discovery Center — just down the road from where he grew up. As a naturalist, he does everything from leading nature hikes to managing the native landscape gardens at the center.

The trip with the Urban Rangers is one of the highlights of his year.

"I've seen 200 to 300 kids go through this trip over the years," Whalen said. "Every once in a while, I'll run into an adult who comes up to me and thanks me for the experience they had years ago. That's when I realize we must be doing something right."





A SUCCESS STORY

DaQuon Cheadle is living proof that the Urban Rangers program works.

Several years ago, he was “in a bit of a dark place,” he said. He didn’t have much drive, and he didn’t see much hope for the future.

Then he learned about the Urban Rangers through a cousin, and he decided to join. That influence turned his life around, he said.

“The program’s goal is to take inner-city boys and build them into responsible men,” said Cheadle, 20, who now lives in Parkville. “They want to show us that there is a life away from the drugs, gangs, and things like that.”

Cheadle responded by getting better grades, getting a part-time job at Home Depot, and playing on Schlagle High School’s football team. He embraced the program’s goal of remaining confident in uncomfortable situations. He uses the wilderness trip as an example.

“I had never canoed, camped, fished, any of that,” he said. “I never had the opportunity.

“I was a little scared before I went (to camp) my first time. I was afraid I was going to flip, get eaten by bugs, or

not know what kind of animals were out in the woods. Once I did it, it was a great feeling.”

Cheadle went back every year he was eligible (through his senior year) and now returns as a counselor. He and others are credited with coming up with a new term for flipping their canoes — to titanic.

“I didn’t titanic (last year), but I came close,” he said. “We had three canoes bump into each other, and mine was rocking a little bit, but I kept from going over.”

Cheadle now attends Coe College in Iowa and has aspirations of becoming a data analyst. His dream job? To work for the Kansas City Chiefs. Even if that doesn’t happen, he is confident he will find a job somewhere in his field.

“I wouldn’t be the man I am today if it wasn’t for the Urban Rangers,” he said. “They taught me to believe in myself.”





"I wouldn't be the man I am today if it wasn't for the Urban Rangers. They taught me to believe in myself."

— DAQUON CHEADLE

IDENTIFYING WITH THE KIDS

Suber was figuratively in the same boat as many of the kids when he attended his first overnight camping and canoeing trip.

"I had never experienced any of this," said Suber, who retired from the Kansas City Public School system after spending 34 years in its sports program. "But I couldn't show the fear I had of being out in the woods, sleeping on the ground, canoeing. I had to be a leader."

That was tested on one of his first float trips when he was one of the first to "titanic."

"All I could hear as I was going into the water was everybody laughing," Suber said. "I told them I did it on purpose. But I don't think they bought it."

Today, Suber is comfortable on land and water in the Current River region and looks forward to bringing the Urban Rangers back each summer.

"Taking these young men five hours from the city and having them get into a canoe and exploring a whole new world is a test," he said. "But the majority of them love it. This is just another part of their learning process." ▲

For more information about the Urban Rangers, visit urckc.org/abouturc.

Brent Frazee is an award-winning freelance writer from Parkville, Mo. He was the outdoors editor for The Kansas City Star for 36 years before retiring in 2016. He continues to write for magazines, newspapers, and websites.



Walnut caterpillars



Fall webworms



Eastern tent caterpillars



CATERPILLARS IN THE CANOPY

UNDERSTANDING
THE WEBS IN
YOUR TREES

by Jan Wiese-Fales

Earth's approximately 180,000 species of butterflies, moths, and skippers all belong to the family Lepidoptera. With a few exceptions, the adult insects are characterized by two sets of scale-covered wings that are wildly diverse in size and color and often strikingly beautiful. Mostly herbivorous — having a taste for plant matter — Lepidoptera share a four-stage life cycle: egg, larva, pupa, and adult. In their larval feeding stage, they are known as caterpillars — also with incredibly diverse evolutionary characteristics.

Some of Missouri's most visible native tree-eating caterpillars are vital players in our shared ecosystem and not the munching miscreants they are perceived to be. Eastern tent caterpillars, fall webworms, and walnut caterpillars dine on trees where the “ick” factor accompanying their evolved habits makes the furry little wigglers seem more menacing than is warranted. Save your ick for bagworms.

SAVE YOUR
ICK FOR THE
BAGWORMS.



BAGWORMS

Feeding on more than 100 species of trees and shrubs, bagworms (*Thyridopteryx ephemeraeformis*) have a distinct preference for evergreens, including eastern red cedar, juniper, arborvitae, pine, spruce, and more. Deciduous menu items include maple, black locust, viburnum, and sycamore, among others. Evergreens are most susceptible to damage and can be killed by high numbers of bagworms.

"You need to take bagworms seriously on evergreens," said Robbie Doerhoff, MDC's forest entomologist.

Bagworms create 2-inch dangling silken bags on their host plant, adorned with camouflaging bits of the plant's foliage, branches, and sometimes even berries. Mobile larvae accumulate the camouflage as they feed and grow. In late summer, they seal their silken armor and attach themselves to a branch to pupate.

In seven to 10 days, the male emerges as a short-lived, furry-bodied black moth whose wing scales were shed as he emerged from his bag, leaving his wings translucent. Females do not develop wings, remaining maggotlike within their bags and releasing a pheromone that attracts a mate. The female lays eggs within the bag and dies. Larvae hatch in spring and travel short distances or "balloon" to suitable hosts by way of a silken thread.

From late fall to early spring, MDC recommends removing the silken bags into a bucket of soapy water and disposing of them in a sealed bag. Heavily infested branches may be pruned and burned. In cases of large numbers of bagworms, the organic pesticide *Bacillus thuringiensis* var. *kurstaki* (Btk) can be sprayed in early June to kill small larvae as they feed.



When caterpillars can be easily reached, handpick them from their webs with gloved hands and drop them into a bucket of soapy water. It's a great way to eliminate them.



BAGWORM, FALL WEBWORMS, & EASTERN TENT CATERPILLARS: JIM RATHERT; BAGWORM MOTH: MARK DRIELING, BUGWOOD.ORG; FALL WEBWORM MOTH: GYORGY CSOKA, HUNGARY FOREST RESEARCH INSTITUTE, BUGWOOD.ORG; EASTERN TENT MOTH: STURGIS MCKEEVER, GEORGIA SOUTHERN UNIVERSITY, BUGWOOD.ORG



EASTERN TENT CATERPILLARS AND FALL WEBWORMS

Hatching at about the same time as their host tree's buds break, the larvae of eastern tent caterpillars (*Malacosoma americanum*) form a colony and construct a white webbed tent in the fork of a tree, venturing out to feed in the morning, evening, or at night. The tent protects them from predators, rain, and temperature fluctuations until they are ready to crawl away to pupate.

The best first defense against eastern tent caterpillars is spotting and removing their eggs, which appear as shiny black masses of 150 to 400 eggs encircling small branches on their favored wild plum, black cherry, apple, crabapple, and other fruit trees.

With a preference for nut trees, fall webworms (*Hyphantria cunea*) also enjoy persimmons and other fruit trees, but happily dine on more than 120 species.

In the late spring and early summer, the first of two to three generations of emerging adult webworm moths lay hairy masses of several hundred eggs on the bottoms of leaves. Hatching larvae form colonies that spin nests of silk at the ends of tree branches. Because they never leave its protection, the nest expands to encompass more foliage as they grow larger — until they abandon the web to pupate.

Eastern tent caterpillar moths have feathery antennae and are brown or gray shades with lighter stripes that allow them to blend in with natural surfaces. Their larvae are black with a white stripe down the back, both brown and yellow lines, and a row of oval blue spots along their sides.

Fall webworm moths are white with black spots and larvae are yellow-green with black heads or tan with red heads, both with gray hairs and pairs of wartlike black spots on their backs.

When caterpillars can be easily reached, handpick them from their webs with gloved hands and drop them into a bucket of soapy water. It's a great way to eliminate them.

"Tearing their nests open exposes them to insect and bird predation," Doerhoff said. "For nests higher up, pound a nail into the end of a long stick and use that to tear the nest open."

Twirling the stick in the nest can help clear it.

Btk will not penetrate the insects' silken structures, so catching larvae as they hatch — or move in and out of their tents — is key to its effectiveness.

Large numbers of colonies can stress trees and are unsightly, but damage is mainly cosmetic, and numbers of insects fluctuate year to year. Doerhoff warns the common practice of burning the nests is harmful to the tree.

"Because of the ecological damage that insecticides can cause, we only recommend chemical controls for specific issues," she said. "There's no need to think of most native defoliators as problematic or dangerous. Healthy trees will survive."

"Think of them as early Halloween decorations," she joked.

Large numbers of caterpillars migrating away from the trees to pupate can be a nuisance and are quite alarming, but not a problem for people or pets.

CATALPA WORMS

Catalpa trees are best known for two things — their gorgeous gold-and-purple throated white clusters of trumpet-shaped blooms and the fat, 3-inch yellow-and-black larvae of the catalpa sphinx moth that dine freely on their leaves. Commonly known as catalpa worms, there are those who call the boom-and-bust moth larvae "catfish candy" as they are a prized fishing bait for catfish, bluegill, and largemouth bass. Whereas some folks are worried about caterpillars that defoliate trees in their landscapes, others have planted catalpa trees specifically for the larval activity. Plump, smooth catfish candy caterpillars freeze well for later use if blanched first.



Catalpa blooms





Walnut caterpillars

WALNUT CATERPILLARS

Walnut caterpillar (*Datana integerrima*) pupae overwinter in the soil, and the 1- to 2- inch adult moths, which are tan to reddish-brown with lines on their forewings and lighter hindwings, emerge to lay masses of 600 or more eggs on the backs of leaves. Larvae, which feed together, skeletonizing leaves, are a light-yellow green, turning reddish-brown with white stripes on their sides.

The larvae molt together in groups on main branches or the trunk of a tree. After their final molt, they emerge as white-tufted black caterpillars and feed ravenously as individuals in the canopy. They consume 80 percent of their entire lifetime of meals in three to five days before dropping to the ground to pupate. Walnut caterpillars prefer mature foliage.

Though rarely necessary, Btk can be used when the larvae are small.



SAWFLIES

European and native Loblolly pine sawflies (*Neodiprion sertifer* and *Neodiprion taedae*) are common defoliating insects in Missouri, capable of defoliating and stressing native shortleaf and other pine trees.

In recent years, there have been localized outbreaks of sawflies in the state, Doerhoff said.

"Weather conditions, like abnormally warm winters, are likely to be a contributing factor," she said.

At first glance, the adult sawfly somewhat resembles a housefly but is a broad-waisted wasp from the Hymenoptera family, which includes sawflies, wasps, ants, and bees. Adults have four membranous wings. What looks like a stinger on the sawfly is a sawlike ovipositor that the adult female uses to deposit her eggs, the source of the insect's name.

Like their cousins the Lepidoptera, sawflies' ravenous larvae — resembling caterpillars — are the host plant defoliators.

In late summer to early fall, sawflies emerge from cocoons to mate. The female "saws" through the outer layer of 10 to 12 different pine needles and lays six to eight eggs into the slits she makes on each of the needles.

Eggs hatch April through May and the larvae feed in groups for three to four weeks before dropping off the tree and spinning a cocoon in leaf litter or soil. European pine sawflies have black heads and grayish-green bodies with light stripes and feed primarily on the outer epidermal layer of older needles on nonnative pines. Loblolly pine sawflies have brown heads, dull green bodies, and heavy black stripes and will munch on all but the newest needles on shortleaf and loblolly pine.

One way to easily identify conifer-loving sawfly larvae is to wave your hand near them. When disturbed, they strike a defensive pose, curling their heads and tails back over their bodies.

When pine needles lose their outer layer to sawfly feeding, they become desiccated and turn brown. Keeping an eye out for this telltale "flagging," as it is called, allows for mechanical removal by knocking the larvae into a bucket of soapy water.

An organic approach to control them is to spray pine trees with insecticidal soap or neem oil when the larvae are small.

Sawflies have several natural predators including yellowjackets, bald-faced hornets, paper wasps, and a parasitic fly. Some birds and rodents also have a taste for the larvae.

Chemical control may be warranted after two consecutive years of defoliation on the same pine. Note that because they are not caterpillars, the organic, larvae-killing Btk insecticide has no effect on them, but another organically derived insecticide, Spinosad, is effective.



ONE TO WATCH

Larvae of the European spongy moth (*Lymantria dispar*), formerly known as the gypsy moth, defoliate more than a million acres of forest in the northeastern U.S. each year.

Introduced into Massachusetts in 1869, the moth has slowly spread — but not yet into Missouri. Small populations have been observed but eradicated due to a diligent 60-year cooperative partnership to detect their presence. MDC shares the credit for the effort with the Missouri Department of Agriculture and the USDA.

“Statewide, partners on this effort place over 6,000 traps a year to detect their presence,” Doerhoff said of the bright orange, triangular cardboard boxes — benign to humans — that use female spongy moth pheromones to lure and trap the flighted male spongy moths. “If it were to establish here, the spongy moth could decimate our oak forests.”



Thirteen of the moth's favorite host species are common in Missouri. A loss of these trees would adversely affect entire ecosystems of insects, birds, and animals across the state, as well as the state's economy.

CONTROL — NATURALLY OR CHEMICALLY

Tree-feeding caterpillars have many predators, from birds to wasps and assassin bugs, and they also have a diverse set of parasitic insect species to help keep their numbers in check.

But when it is deemed necessary to remove them quicker than nature provides, Doerhoff said manual removal is the best practice to prevent harming off-target insect species. Insecticides, many of which are broad-spectrum and can kill a wide range of insects we know and love, should only be considered in cases where a tree's or shrub's life is endangered. When warranted, she recommends Btk, which only targets larvae of Lepidoptera.

Healthy trees are better equipped to handle foliage loss. Keeping trees watered during long rain-free periods is advised.

“Drought is very hard on trees, causing stress and root damage, which can weaken them over time,” Doerhoff said. “Even though the weather is ultimately to blame for a tree's decline, the defoliators can be the last straw for an unhealthy tree.”

Trees and shrubs most often regrow foliage that is munched in spring, which adds extra stress on a tree; late season defoliation is less troublesome since trees have already fruited, stored energy for the year, and are on a path to normal dormancy.

MDC urges Missourians to take note of insect activity in your area, especially heavy leaf-feeding on oaks. If you spot caterpillars with pairs of red and blue spots on their backs, contact your local MDC office or send an email to Forest.Health@mdc.mo.gov. If possible, collect specimens or take pictures of the caterpillars. ▲

Jan Wiese-Fales is a freelance writer who gardens in Howard County and enjoys camping, hiking, floating, and photographing Missouri's wild outdoors.

CAT



FISHING

FOR THE THRILL OF CATCHING — AND RELEASING — THE BIG ONES

by Brent Frazee | photos by David Stonner

With one tug of a bank line, Corey Gibson got a reminder of how big the blue and flathead catfish can get in the Missouri River.

As his fishing partner, Roy Myers, maneuvered the boat into the shallows, the line showed little signs of life. But when Gibson started to lift it, the calm water exploded with activity.

A giant blue cat shot to the surface, spraying water in all directions and drenching Gibson. But it wasn't long before the fish was in a giant net and pulled into the boat.

"That one was a sleeper," Gibson said as he unhooked the muscle-bound catfish. "He wasn't pulling on the line or anything. He was just sitting there."

Gibson laughed and added, "But he didn't want to come into this boat, that's for sure."

Gibson's team — his wife, Steph, friend Jermyn Porter, his 9-year-old son Owen, and Myers — marveled at the big cat as Gibson lifted it onto a scale.

"OK, Owen, guess how big," he said.

Owen thought for a second before declaring, "Sixty-two pounds."

The group looked at the readout on the scale and roared in laughter when the fish finally settled.

"Sixty-two pounds exactly," Gibson said. "How did you do that?"

The boy shrugged and basked in his new-found attention. Gibson posed for pictures and a video, then eased the big fish back into the muddy water.

A lucky catch? No, it was just business as usual for Gibson and his crew.

They set lines from one end of the portion of the Missouri River that flows through the Show-Me State to the

other, and they make a habit of catching giant cats.

This late September day last year was an example. By the time they finished running their bank lines, trotlines, and limblines, they caught and released 12 big flatheads and six large blues, all of them muscular aquatic creatures.

"When I tell other fishermen about the size of fish we catch, some of them won't believe us. They'll say, 'We're from the Show-Me State. You have to show us,'" said Gibson, 43, who lives in Hallsville and works as a chef at a nearby restaurant. "Then, I'll tell them to watch our videos on social media, and they'll see."

"This old river still has a lot of big fish in it. You just have to know where to look."

"This old river still has a lot of big fish in it.
You just have to know where to look."

— COREY GIBSON

TARGETING THE BIG ONES

Gibson and his crew have an uncanny knack of knowing where the big ones can be found.

They fish from April through November, using alternative methods to target Missouri's legendary catfish. They set lines instead of using rod and reel. And they catch some giants.

"Some people bad-mouth fishermen who run lines," Gibson said. "They say there's no skill to it. But they're wrong.

"You still have to know where to set your lines; where the big ones are going to be. I like getting up close to the fish I catch. I like looking at a map, targeting where I think they will be, putting bank lines out, and going out the next morning to see if I was right.

"That's my idea of fun. We release all the big ones we catch."

And they have caught some eye-opening fish. Gibson caught and released a 107-pound blue cat on a bank pole last fall. And he pulled in an 84-pound flathead on a bank pole behind an L dike several years ago.

Myers has played a big part in that success. He met Gibson through Facebook and set up a fishing trip after meeting in person at a catfish tournament. They found success on their first trip, and they've been fishing together ever since.

"We've fished together long enough that we can read each other's mind," Myers said. "We both have a good idea of where to set up our lines."

On this early fall day, they set many of their bank poles at the tips of wing dikes and along mud banks behind L dikes. They also set lines near logs and woody cover where flatheads like to hide.

This was just the start of one of their favorite times of the year to fish. As the water cools, they like to fish the holes behind dikes where shad often gather.

"They're gorging on shad, feeding up for winter, and you can really catch some big fish," Gibson said.





THE KEYS TO SUCCESS

Big bait, big fish. That's Gibson and Myers' motto.

They leave the small minnows for other anglers. They often use common carp or bullheads as big as 1½ pounds or giant goldfish. They have an aerated tank in the back of Gibson's truck capable of holding 200 baitfish.

They use 12-foot-long fiberglass bank poles that are secured by drilling holes in banks, rocks, or logs. They use 8- to 10-ounce weights, heavy duty braided line, and 10- to 20-ought circle hooks.

That might sound extreme to many anglers, but Gibson and Myers are going after giant fish.

"Our goal is to catch an alternative-methods state record for either flathead or blue cats," Myers said. "They're out there."

The alternative-methods mark stood at 120 pounds, 8 ounces for blue catfish and 100 pounds for flatheads as of last fall.

They use trotlines of varying length, depending on the time of the year and the conditions. On this trip, they used one of their longer lines, stretching 100 feet before the first hook.

"We want to reach out to the mud flat right at the edge of the main channel, where they'll move up to feed," Gibson said.

They follow MDC regulations allowing them 33 hooks per angler, labeling their lines with either their name and address or their conservation ID numbers, and checking their lines at least once every 24 hours.

"You don't want a fish hanging there too long," Gibson said. "We care about the resource. It takes a long time for some of these catfish to get that big. We release the big ones so someone else can have fun catching them sometime."

ALTERNATIVE WAYS TO CATCH 'EM

You don't need a rod and reel to catch big catfish on the Missouri River. MDC allows multiple alternative methods for big river catfishing.

- **Trotlines:** A main line with multiple droplines, popular for covering wider areas and depths.
- **Bank lines:** Long plastic poles that often are shoved or anchored into the bank so that lines descend vertically into the water.
- **Limblines:** Lines attached to trees or other objects, with hooks hanging into the water.
- **Jug lines:** Individual lines that are attached to an object, such as a jug or pool float, and allowed to float freely. Jugs must be monitored by anglers at least once an hour as they drift.
- **Snagging or grabbing:** These methods are allowed during the paddlefish snagging season for game fish.

IMPORTANT REGULATIONS AND SAFETY TIPS

- **Line and hook limits:** You can use a maximum of 33 hooks at any one time, except on the Mississippi River where the maximum is 50. However, if you're fishing the Mississippi and other waters at the same time, no more than 50 hooks total may be used (and no more than 33 of those may be used on waters other than the Mississippi).
- **Hook spacing:** Hooks on a trotline must be at least 2 feet apart.
- **Attendance:** All lines, regardless of type, must be attended at least once every 24 hours or removed.
- **Registration:** If you use more than three poles (or two on the Mississippi River), the additional poles must be labeled with your name and address or conservation number.
- **Safety:** When using trotlines on rivers, never set or run lines alone. It's recommended to have one person operate the boat while another works the line to avoid accidents.

THEY'VE COME A LONG WAY

After years on the water, Gibson now knows the ways of Missouri River catfish. But it wasn't always that way. He remembers years of frustration before finally learning.

"When I was just getting started, I tried fishing with rod and reel from the bank, but I didn't catch much," he said. "I was getting discouraged, so I started hanging out at a local bait shop and asking questions.

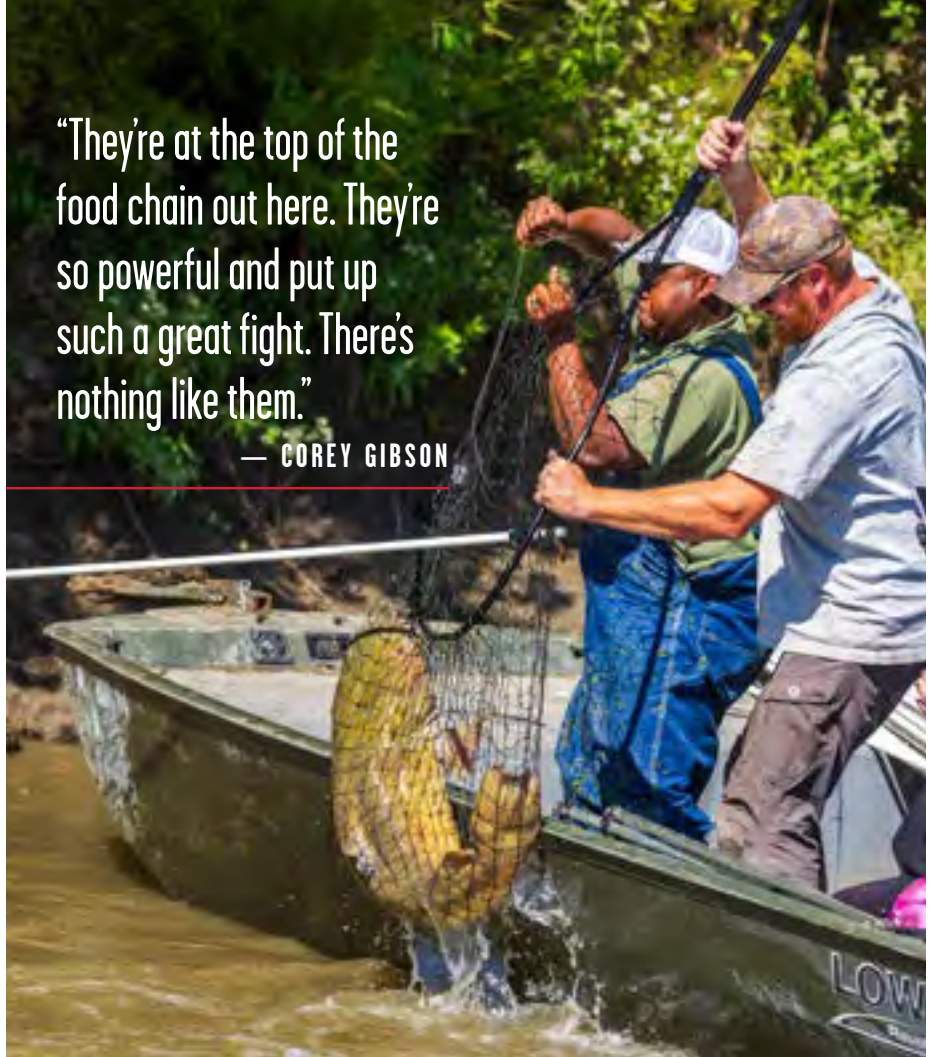
"Finally, I tagged along with a couple of them and just watched what they were doing as they set lines. I learned how they did it and the tackle they used. I owe a lot to those guys for getting me started."

From there, a lot of time on the water paid off. There was a lot of trial and error, but eventually Gibson learned where to set his lines.

"I became obsessed with catching big catfish," he said. "They're at the top of the food chain out here. They're so powerful and put up such a great fight. There's nothing like them."

"They're at the top of the food chain out here. They're so powerful and put up such a great fight. There's nothing like them."

— COREY GIBSON



THE SCIENTIFIC VIEW

Silver carp are widely known as the scourge of large river systems because of their productivity and threat of competing with the young of native species for plankton.

But in an odd twist, they may be helping the catfish population grow stronger by providing an additional forage species.

"The silver carp tend to spawn in high-water events," said Adam McDaniel, a fisheries scientist for MDC. "They'll put a bunch of offspring out there; a big influx of small fish that grow really fast that the catfish can capitalize on.

"I'd say the silver carp are now a major part of the catfish's forage base."

But other factors have played major roles in the growing population of big fish in the Missouri River.

The prohibition of commercial fishing on the Missouri River is now more than 30 years old, and it continues to have positive effects on





the catfish populations. Regulations for recreational anglers — such as the number of hooks allowed each angler (33), tighter bag limits, and a rising catch-and-release ethic — have helped, too.

“It takes 20 years or more for a blue or a flathead to grow to 50, 60 pounds,” McDaniel said. “We’re seeing more and more people release those big ones to grow even larger. Our population of big fish is definitely better than it used to be. They’re definitely more common than they used to be.”

A TEAM WITH A FOLLOWING

How many bank-line anglers do you know that have sponsors? Gibson and his wife, Steph, do.

Before they met in 2013, Steph had never been catfishing.

“It just wasn’t something I could picture myself doing,” said Steph, a housekeeper for the University of Missouri.

But she started tagging along with Corey and began videoing their adventures. When she posted one of the segments on her social media account, she and Corey were amazed at the response.

“I posted a video of Corey catching a 62-pound blue cat on my TikTok account and it just blew up,” she said. “We got 300,000 views.”

That was the start of something big for the Gibsons. Ever since that trip, they have been posting social media videos of Corey, Myers, and Steph pulling in giant river catfish under their “Corey and Steph” title and they’ve attracted thousands of followers.

They’ve even attracted sponsors that help with the cost of bait, equipment, and travel expenses. But mostly, they just enjoy the challenge of setting lines for some of Missouri’s biggest fish.

“I don’t care how many times I do it, I still get excited catching a big blue or flathead,” Gibson said. ▲



Brent Frazee is an award-winning writer and photographer who was the outdoors editor of The Kansas City Star for 36 years before retiring in 2016. He continues to freelance for magazines, newspapers, and websites. He lives in Parkville with his wife, Jana, and two yellow labs, Millie and Maggie.

Get Outside

in JULY → Ways to connect with nature



Fragrant sumac fruit

America Turns 250

This year marks a very special Fourth of July. America will celebrate its 250th birthday, or Semiquincentennial, marking 250 years since the Declaration of Independence signing. Amidst the parades, barbecues, and fireworks, MDC encourages you to get out and discover the patriotism shown in the red, white, and blue of nature. These are just a few examples. What will you discover?

RECIPE CARD

Sumac Tea

INGREDIENTS:

- 1 cup sumac drupes, removed from stem
- 2 quarts water
- 3/4 cup sugar or honey



DIRECTIONS:

Place sumac in a container or pitcher with just enough water to cover, then mash them up. Top with the rest of your water.

Steep for about two hours.

Strain out the tiny particles, as they can cause irritation.

Mix in sweetener of choice to taste.

American Beauties

Prairies are a great place to visit in July to see a bounty of blooms spread across the landscape. In fact, there are so many flowers it can resemble a natural fireworks display!

Prairie blazing star grows in spikelike stalks with densely packed rose-purple flowerheads. **Blue vervain** also grows in stalks with small flowers encircling the top. The flowers can be deep purple, violet, light lavender, or sometimes white. Both resemble colorful rockets.

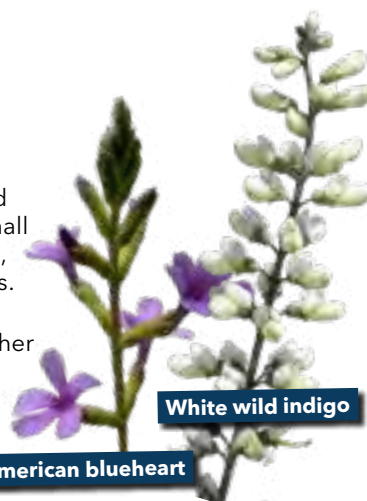
American bluehearts also bloom in native prairies. With such a patriotic name, it could hardly be left off the list, but the name is rather misleading. Its five-petaled blooms are more purple than blue.

White wild indigo also blooms in prairies, as well as along roadsides, streams, and other open areas. The white flowers grow on opposite sides of a long stalk.



Prairie blazing star

Blue vervain



White wild indigo

American blueheart

Natural Events to See This Month

Here's what's going on in the natural world.



American bullfrogs breed.



Lobster mushrooms appear.



Passion flower blooms.

VIRTUAL

HUNTING SERIES: Tree Stand Safety

Thursday • July 9 • 5:30-6:30p.m.

Online only

Registration required by July 9. For more information, call 888-283-0364 or visit short.mdc.mo.gov/o58.

All ages

Tree stand accidents are one of the major causes of hunting-related injuries. Find out steps that you can take to ensure your safety while setting up and hunting from a tree stand. Several examples of different tree stands will be mentioned in this class.

Fruits of Our Labor

Sumac produces red fruits that continue to mature through July. Did you know you can make a thirst-quenching, lemonadelike tea from sumac?

That hits the spot on a hot July day.

Mulberry fruits are also maturing, and Missouri is home to two varieties — one native, and one introduced. The red mulberry, which is native, starts out red and turns more purplish as it ripens. The white mulberry, which was introduced, was named for its white flowers and berries, which eventually turn purple. Both varieties can be used in jellies, pies, and drinks, and birds love to eat them, too.



White mulberry



A Feather in Your Cap

Some of our feathered friends like to show their patriotic colors this time of year.

Male summer tanagers, which are bright red, can be found in pine-oak forests, deciduous woodlands, and parks. You may hear their call, which is a dry, sharp *pit titi tuck* or *chi ti bit*.

White **great egrets** are large herons that frequent marshes, ponds, ditches, and lakes.

Male indigo buntings are bright blue. They perch in brushy fields, forest openings, woodland edges, yards, parks, and hedgerows, often singing sweet-sweet, *tew-tew*, *chew-chew*.

→ CONSERVATION NEAR YOU

Craving more local conservation connections? Find events near you at mdc.mo.gov/events, or catch the latest on social media. Reach out to your closest regional office and learn about events from MDC staff. Outdoor fun awaits. Get out there!



Get Social

Join the conversation and connect with us on social media. Search "MO Conservation" to follow us on Twitter (X), Facebook, YouTube, Instagram, Pinterest, and Flickr.



Conservation Headquarters

573-751-4115

PO Box 180, Jefferson City, MO 65102-0180

Regional Offices

Central

573-815-7900

3500 E Gans Rd
Columbia, MO 65201

Kansas City

816-622-0900

12405 SE Ranson Rd
Lees Summit, MO 64082

Northeast

660-785-2420

3500 S Baltimore
Kirksville, MO 63501

Northwest

816-271-3100

701 James McCarthy Dr
St. Joseph, MO 64507

Ozark

417-256-7161

551 Joe Jones Blvd
West Plains, MO 65775

Southeast

573-290-5730

2302 County Park Dr
Cape Girardeau, MO 63701

Southwest

417-895-6880

2630 N Mayfair
Springfield, MO 65803

St. Louis

636-441-4554

2360 Hwy D
St. Charles, MO 63304



Places to Go

NORTHWEST REGION

Tarkio Prairie Conservation Area

Birds, blooms, bugs,
and solitude

by Larry Archer

✳️ As a deep-soil, tallgrass prairie, Tarkio Prairie Conservation Area (CA) offers the usual prairie fare — grassland bird species, native wildflowers, and a variety of insects that feed the former and pollinate the latter. Located on 640 acres in northwest Missouri's Atchison County — closer to Iowa than any named city the average person might recognize — it offers something else many people seek, solitude.

"The big thing is there's no amenities — there's parking lots, maybe some signs and brochures," said MDC Wildlife Biologist Nathaniel Umphrey. "Other than that, it's pretty much managed for a prairie solitude experience that's similar to South Dakota or western Minnesota."

Tarkio Prairie CA is a combination of remnant and restored prairie, and only a professional could tell the difference between the two, he said.

"They're what I'd call pretty high-quality restorations," he said. "The majority of the east side is actually remnant prairie. As we remove our woody invasion and get the cedars out of there, all of a sudden it just looks like the rest of it. One thing people will notice is the continual work our department does to reclaim our grasslands."



"The main thing people go there for is a quail hunting experience — a prairie quail hunting experience that you can get in Missouri with a chance at ring-necked pheasants. We're the only part of Missouri that a person can drive to and get a good chance, from a recreational hunting standpoint, of harvesting a quail and a pheasant in the same day."

—MDC Wildlife Biologist Nathaniel Umphrey



With 640 acres of primarily native and restored prairie, Tarkio Prairie CA offers visitors the opportunity to see northwest Missouri as it would have been before much of it was converted to cropland. In order to maintain the prairie element, trails are mowed infrequently, so be prepared for hiking in tall grass. However, the payoff is the variety of grassland bird species and native wildflowers, including the dickcissel and compass plant (inset).



TARKIO PRAIRIE CONSERVATION AREA

Tarkio Prairie Conservation Area consists of 640 acres in Atchison County. From Westboro, take Route C east 5 miles, then Y Avenue south 2 miles.

40.5084, -95.2209

short.mdc.mo.gov/o5B 816-271-3100

WHAT TO DO WHEN YOU VISIT



Birdwatching The eBird list of birds recorded at Tarkio Prairie CA is available at short.mdc.mo.gov/o5X.



Camping Designated camping sites near area's two parking lots.



Fishing Two fishing ponds. Black bass, catfish, sunfish.



Hiking A 1½-mile maintained hiking path connecting the area's two parking lots.



Hunting **Deer** and **turkey**. Regulations are subject to annual changes. Refer to MDC's regulation page online at short.mdc.mo.gov/Zjw.

Also **quail**, and **rabbit**.

Ring-necked pheasant

Northern bobwhite

WHAT TO LOOK FOR WHEN YOU VISIT



Bullsnake



Bobolink



Regal fritillary



Henslow's sparrow



Lowbush Blueberry

Vaccinium pallidum

Status

Native shrub with edible fruits

Size

Height: 6 inches to 3 feet

Distribution

Mostly south of the Missouri River



Lowbush blueberries are low, stiffly branching shrubs, often growing in extensive colonies. They flower from April to May and sometimes reflower in October. The flowers are white to greenish white, often pinkish-tinged or red, about ¼ inch long, and cylinder-shaped. Fruits appear from late June to August, ripening throughout a long period. Each berry is globe-shaped and about ¼ inch across, dull dark blue to almost black with a faint whitish coating.



ECOSYSTEM CONNECTIONS

Because the berries ripen over long periods, a colony of lowbush blueberries is a reliable, long-term food source for birds, small mammals, and pollinators. American robins, blue jays, tanagers, foxes, chipmunks, and mice, just to name a few, may eat the berries, while white-tailed deer and rabbits browse the leaves and twigs. The flowers attract bumblebees, and they are rewarded with both nectar and pollen.



HUMAN CONNECTIONS

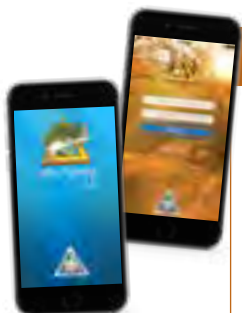
Lowbush blueberries are prized for their sweet, edible berries. They ripen over a long period, making the berries more difficult to collect in large quantities at any one time. The berries can be eaten raw or cooked and used in jams, pies, muffins, and juices, much like the blueberries for which we are most familiar.

Outdoor Calendar

❖ MISSOURI DEPARTMENT OF CONSERVATION ❖

Free MO Hunting and MO Fishing Apps

MO Hunting makes it easy to view permits, electronically notch them, and Telecheck your harvest. MO Fishing lets you view permits, find great places to fish, and ID your catch. Get both in Android or iPhone platforms at short.mdc.mo.gov/Zi2.



FISHING

Black Bass

Impounded waters and non-Ozark streams:

Open all year

Most streams south of the Missouri River:

- ▶ Catch-and-Keep:
May 23, 2026–Feb. 28, 2027

Bullfrog, Green Frog

June 30 at sunset–Oct. 31, 2026

Nongame Fish Giggling

Impounded waters, sunrise to sunset:
Feb. 16–Sept. 14, 2026

Paddlefish

On the Mississippi River:
Sept. 15–Dec. 15, 2026

Trout Parks

State trout parks are open seven days a week
March 1 through Oct. 31.

Catch-and-Keep:
March 1–Oct. 31, 2026

HUNTING

Black Bear*

Oct. 17–30, 2026

Bullfrog, Green Frog

June 30 at sunset–Oct. 31, 2026

Coyote

Restrictions apply during April, spring turkey season, and firearms deer season.

Open all year

Crows

Nov. 1, 2026–March 3, 2027

Deer

Archery:

Sept. 15–Nov. 13, 2026

Nov. 25, 2026–Jan. 15, 2027

Firearms:

- ▶ Early Antlerless Portion (open areas only):
Oct. 9–11, 2026
- ▶ Early Youth Portion (ages 6–15):
Oct. 24–25, 2026
- ▶ November Portion:
Nov. 14–24, 2026
- ▶ Late Youth Portion (ages 6–15):
Nov. 27–29, 2026
- ▶ Late Antlerless Portion (open areas only):
Dec. 5–13, 2026
- ▶ Alternative Methods Portion:
Dec. 26, 2026–Jan. 5, 2027

Doves

Sept. 1–Nov. 29, 2026

Elk*

Archery:

Oct. 17–25, 2026

Firearms:

Dec. 12–20, 2026

Groundhog (Woodchuck)

May 11–Dec. 15, 2026

Pheasant

Youth (ages 6–15):

Oct. 24–25, 2026

Regular:

Nov. 1, 2026–Jan. 15, 2027

Quail

Youth (ages 6–15):

Oct. 24–25, 2026

Regular:

Nov. 1, 2026–Jan. 15, 2027

Rabbits

Oct. 1, 2026–Feb. 15, 2027

Sora, Virginia Rail

Sept. 1–Nov. 9, 2026

Squirrels

May 23, 2026–Feb. 15, 2027

Teal

Sept. 12–20, 2026

Turkey

Fall:

- ▶ Archery Portion:
Sept. 15–Nov. 13, 2026
Nov. 25, 2026–Jan. 15, 2027
- ▶ Firearms Portion:
Oct. 1–31, 2026

Waterfowl

See the Migratory Bird and Waterfowl Hunting Digest or visit short.mdc.mo.gov/ZZx for more information.

Wilson's (Common) Snipe

Sept. 1–Dec. 16, 2026

Woodcock

Oct. 18–Dec. 1, 2026

**Only hunters selected through a random drawing may participate in these hunting seasons.*

For complete information about seasons, limits, methods, and restrictions, consult the *Wildlife Code of Missouri* at short.mdc.mo.gov/Zib. Current hunting, trapping, and fishing regulation booklets are available from local permit vendors or online at short.mdc.mo.gov/ZZf.

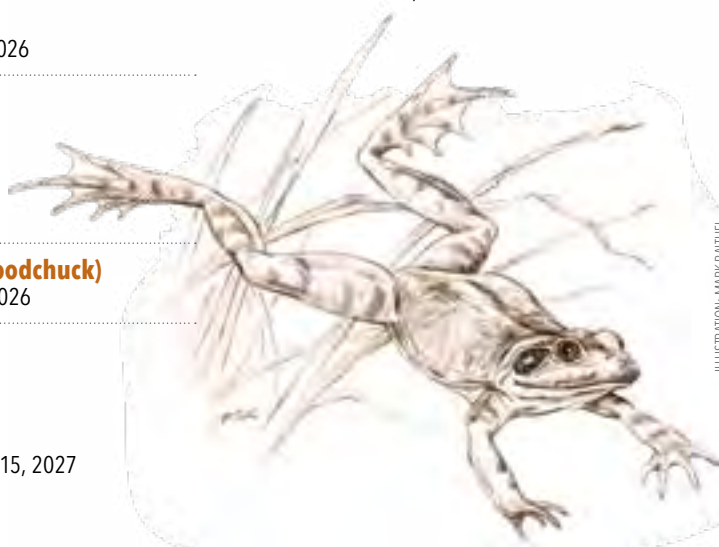


ILLUSTRATION: MARK RAITHEL



Our Mission

The Missouri Department of Conservation protects and manages the fish, forest, and wildlife of the state. We facilitate and provide opportunity for all citizens to use, enjoy, and learn about these resources.

Free to Missouri households

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An aerial view of Amarugia
Highlands Conservation Area

📷 by **David Stonner**